Driving Growth in Next Generation Space Enabled Applications and Services through International Partnerships

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Ambassador for US Operations

Catapult is a Technology Strategy Board programme

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Satellite Applications

The Catapult Network

Big Data -> CEMS
M2M -> Satcomms
and IoT

Connected Digital Economy

Platforms, Technologies, Routes to Market

Satellite Components of Solutions, Test Cases

Satellite Applications

User Requirements, Ideas, Routes to Market

New Solutions

Off-Shore Wind Resource Mapping
Wind and Wave Forecast and Monitoring
Communications and Positioning

Off-Shore Renewable Energy

Future Cities

Urban Planning inc Heat islands
Monitoring Building Usage
Precision Farming

Transport Systems

Transport Infrastructure Monitoring
Maritime Emergency Response
Automated Vehicles
Communications and Positioning

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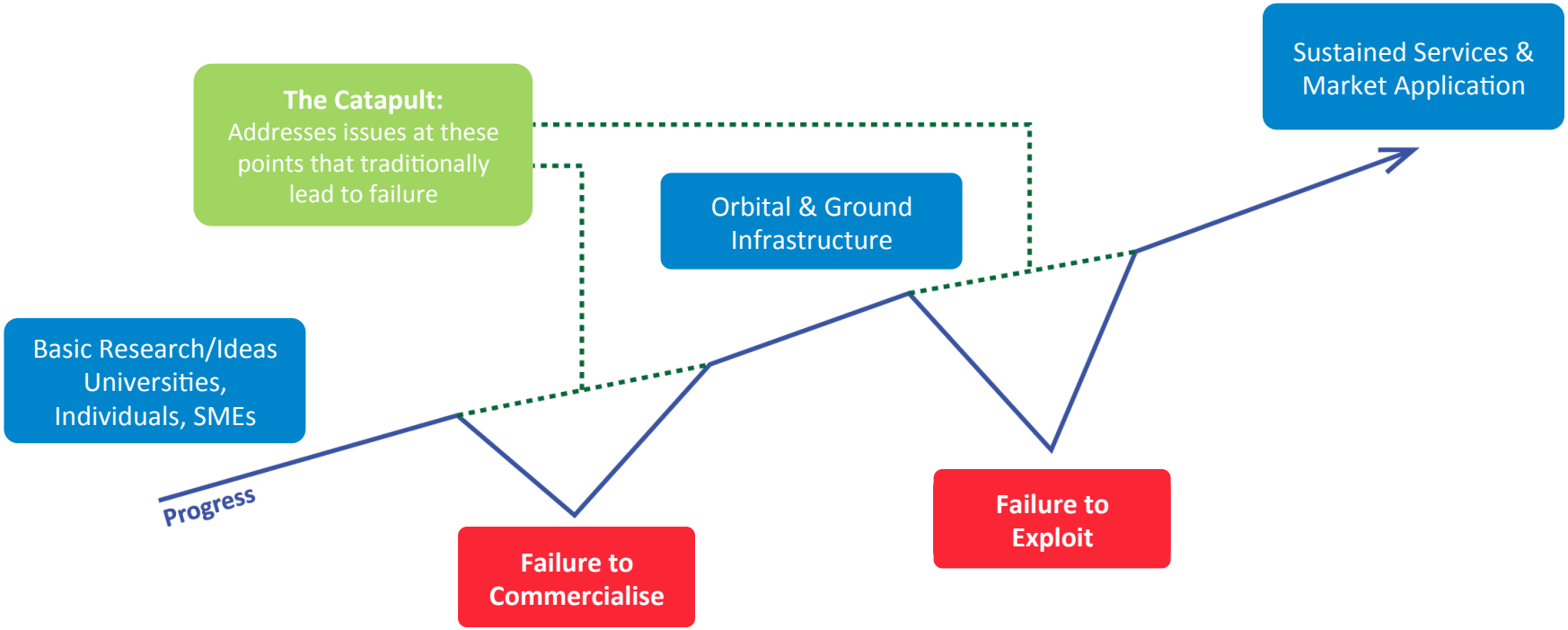
Harwell Oxford

Background and Mission



£40bn Market by 2030

10%pa Growth

Major growth in satellite applications but significant barriers for new businesses

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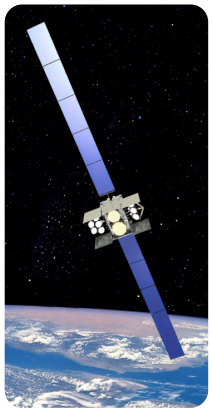
Overview



Upstream Markets
Manufacturers, Suppliers, Payload Builders

Mission Platforms

In-Orbit Demonstrator

Airborne Demonstrator

Flat Sat

Comms

EO

Nav

Technology Programmes

Apps Platforms

Downstream Markets
Transport, Security, Civil Protection, Climate, Energy, Natural Resources, Internet of Things.

Lower barriers of learning and costs of innovation

Drives demand

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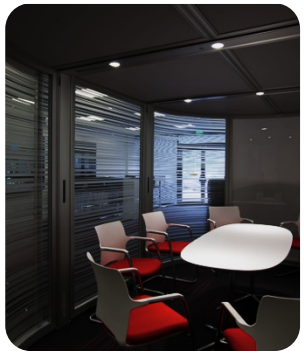
Facilities

Video Wall and 3D

CEMS

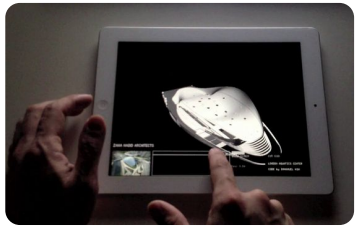
Demo Centre



Operations Centre

Security & Resilience Centre

Public Regulated Service



Spark Centre

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Space + Life Sciences

- Space + life sciences has produced some remarkable success stories: including: the design of an artificial heart, advanced scanning technology, digital thermometers and many, many more…
- Global healthcare is under stress:
  - population growth/ food shortages
  - ageing population
  - lifestyle related diseases
  - drug resistant diseases
  - remote communities collapsing
- Future technologies, to address these issues, need to be: connected, small, light, rugged, low power consumption, remote management and easy to use.
- The result is a successful fusion of two different and yet very complementary sectors – space + life sciences

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Centre of Excellence for Space & Life Sciences Edinburgh BioQuarter, Scotland

- A physical environment for innovation:
  - bringing together healthcare providers, experts from space and life sciences domains, industry and investment organisations
  - explore synergies in these fields and leveraging adjacent technologies to address global healthcare challenges
- Located at the BioQuarter:
  - benefiting from direct access to the nearby Edinburgh Royal Infirmary and the Scottish Centre for Regenerative Medicine
  - drawing on people and organisations from around the UK and internationally.

Building Nine

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Emerging Requirements

- The work of the centre will fall into three strands initially:
  - Exploitation of synergies between space & life sciences – including life support systems, imaging, etc.
  - remote healthcare provision - bringing rapid benefits to isolated communities and citizens
  - Lead on work to design life sciences experiments to accompany the UK's first astronaut, Tim Peake, into space next year

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Conclusions

- The most significant growth in the global space sector is forecast to come from the space enabled applications and service sector, which is growing by more than 10% a year
- The SLS sector is an exciting part of this, bringing together two very different but complimentary sectors, which together could support economic growth and address pressing social issues
- Global healthcare is under stress and there are urgent solutions needed to a number of issues relating to population growth, ageing populations, lifestyle illnesses, medical support for remote communities, and many more…
- The US has expertise in the development of technologies relating to spacecraft, the impact of space flight on the human body and providing remote medical support for people in space and there are a number of success stories where these technologies have been applied successfully for non-space uses

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Conclusions

- The UK has expertise in developing commercial services and applications and there is an opportunity to achieve more and faster through collaboration
- The US is the UK's first international partners of choice in progressing joint collaborations in this field
- There is the opportunity to identify joint academic programmes, around a number of candidate projects, benefiting both sides and responding to social and economic imperatives

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Thank You

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